



Application No.: 09/835483

Docket No.: PGLD-P01-008

AMENDMENTS TO THE CLAIMSIN THE CLAIMS:

1. (Currently Amended) A method of redrawing a visual display of graphical data whereby a current display of the graphical data is replaced by an updated display of the graphical data, comprising,

receiving a request for an updated display of the graphical data;

storing a reduced resolution bitmap representation of the graphical data distinct from the current display;

in response to ~~a redraw~~ the request, replacing the current display with a first approximate representation of the requested updated display, wherein said first approximate representation ~~comprises~~ includes a scaled version of ~~a the stored distinct~~ reduced resolution bitmap representation of said ~~graphical data~~ updated display,

generating a final updated display, and

replacing the approximate representation with the final updated display.

2. (Currently Amended) A method as claimed in claim 1, wherein the replacing of the approximate representation includes replacing said first approximate representation with one or more successive improved approximate representations of the requested updated display before ~~replacing a last displayed approximate representation with~~ displaying the a final updated display.

3. (Previously Presented) A method as claimed in claim 1, wherein the replacement of the current display by said first and any subsequent approximate representations is performed in parallel with generating said final updated display.

4. (Cancelled)

5. (Currently Amended) A method as claimed in claim ~~1~~ 2, wherein a subsequent improved approximate representation comprises said scaled version of the distinct a reduced resolution bitmap representation of said ~~graphical data~~ updated display with vector outlines superimposed thereon.

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6. (Currently Amended) A method as claimed in claim 1, further comprising generating variable visual representations of the graphical data, by dividing the graphical data into a plurality of bitmap tiles of fixed size, storing said tiles in an indexed array and assembling a visual representation of ~~said~~ the graphical data from a selected set of said tiles.
7. (Original) A method as claimed in claim 6, wherein a current visual representation of said graphical data is updated by removing redundant tiles from said selected set and adding new tiles to said selected set.
8. (Previously Presented) A method as claimed in claim 6 wherein said array of tiles represents graphical data from multiple sources.
9. (Original) A method as claimed in claim 7, wherein said multiple sources include applications running on a data processing system and an operating system of said data processing system.
10. (Previously Presented) A method as claimed in claim 6, including processing subsets of said tiles in parallel.
11. (Previously Presented) A method as claimed in claim 6 wherein said tiles are assembled into a visual display, such that a current display is replaced by an updated display, comprising a first approximate representation of the updated display.
12. (Previously Presented) A method as claimed in claim 1, wherein the graphical data corresponds to a digital document composed of a plurality of graphical objects arranged on at least one page,
further comprising:
dividing said document into a plurality of zones; and,
for each zone, generating a list of objects contained within and overlapping said zone.



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13. (Previously Presented) A method as claimed in claim 12, wherein a visual representation of a part of said document is generated by determining which of said zones intersect said part of said document, determining a set of said listed objects associated with said intersecting zones that are contained within or overlap said part of said document, and processing said set of listed objects to generate said visual representation.

14. (Previously Presented) A method as claimed in claim 12, wherein visual representations of said document are generated having a current display be replaced by an updated display, comprising a first approximate representation of the updated display.

15. (Previously Presented) A method as claimed in claim 12, further comprising dividing the graphical data into a plurality of bitmap tiles of fixed size, storing said tiles in an indexed array and assembling the visual representation of said graphical data from a selected set of said tiles wherein each of said zones corresponds to at least one of said tiles.

16 - 48. (Cancelled).

49. (Currently Amended) A handheld device having a graphical interface capable of redrawing graphical data, comprising
a display memory for storing data representative of a document currently being displayed fallon the handheld device,

a second memory for storing a ~~scaled version of a~~ distinct reduced resolution bitmap representation of said document being displayed, and

a module capable of detecting an instruction to generate an updated display of the document, the instruction including an alteration to an aspect of the document being displayed, and in response thereto replacing the current display of the document with a scaled version of the stored distinct reduced resolution image bitmap representation of the document, generating a final updated display of the document, and replacing the scaled version of the distinct reduced resolution bitmap representation of the document with the final updated display of the document.

50. (Currently Amended) A device according to claim 49, further comprising



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a processor for replacing a displayed scaled version of the distinct reduced resolution bitmap representation of the document ~~said first approximate representation~~ with one or more improved reduced resolution bitmap representations ~~approximate representations of the updated display of the document~~.

51. (Cancelled)

52. (Currently Amended) A device according to claim 49, further including a processor for:

- generating variable visual representations of graphical data;
- ~~for~~ dividing graphical data into a plurality of bitmap tiles of fixed size;
- storing said tiles in an indexed array; and
- assembling a visual representation of said graphical data from a selected set of said tiles.

53. (Previously Presented) A method according to claim 7, comprising the further step of updating the indexing of said array to remap tiles in the array to locations on the display.

54. (Withdrawn) A method for generating a visual representation of a part of a digital document, said document composed of a plurality of graphical objects arranged on at least one page, the method comprising:

- dividing said document into a plurality of zones;
- for each zone, generating a list of objects contained within and overlapping said zone;
- determining which set of said zones intersect said part of said document;
- determining a set of said listed objects associated with said intersecting set of zones which are contained within or overlap said part of said document, and:
- processing said set of listed objects to generate said visual representation.

55. (Currently Amended) A method of claim 1, wherein a ~~view display~~ of a bitmap is updated by scaling the bitmap from a first resolution to a second resolution using interpolation.



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56. (Currently Amended) A method as claimed in claim 1 wherein the stored distinct reduced resolution bitmap representation of the graphical data ~~first approximate representation of said updated display~~ is generated and stored prior to the redraw request.

57. (Currently Amended) A method as claimed in claim 56 wherein replacing the current display with the first approximate representation of the updated display further comprises increasing the size of the stored ~~first approximate representation~~ distinct reduced resolution representation of the graphical data by a scaling factor while maintaining the resolution of the first approximate representation, thereby generating the scaled version of the distinct reduced resolution bitmap representation.

58. (Previously Presented) A method as claimed in claim 1, wherein the visual display includes a first image and wherein the updated display includes a second image.

59. (Previously Presented) A method as claimed in claim 58, wherein the second image is a modified version of the first image.

60. (Cancelled)

61. (New) A method according to claim 1 wherein the requested updated display is a zoomed-in version of the current visual display.

62. (New) A method according to claim 1 wherein the requested updated display is a zoomed-out version of the current visual display.

63. (New) A method according to claim 1 wherein the position of the requested updated display on a display screen is different than the location of the current display on the display screen.

64. (New) A method according to claim 1 wherein the graphical data corresponds to a rendering of a part of a digital document and wherein the requested updated display corresponds to a rendering of a different part of the digital document.



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65. (New) A handheld device according to claim 49 wherein the updated display is a zoomed-in version of the current visual display.
66. (New) A handheld device according to claim 49 wherein the updated display is a zoomed-out version of the current visual display.
67. (New) A handheld device according to claim 49 wherein the position of the updated display on a display screen is different than the location of the current display on the display screen.
68. (New) A handheld device according to claim 49 wherein the graphical data corresponds to a rendering of a part of the digital document and wherein the requested updated display corresponds to a rendering of a different part of the digital document.